

Claims

- 1 1. A process for making muntin bars comprising the steps of:
 - 2 a) providing an elongated strip of muntin bar material that has been treated on at least a
 - 3 portion of one side to define an outer surface of a completed muntin bar fabricated from the
 - 4 muntin bar material;
 - 5 b) providing an elongated strip of covering material for controlled application onto a
 - 6 specified portion of the treated portion of the muntin bar material, said elongated strip of covering
 - 7 material including an adhesive for adhering the covering material to the muntin bar material; and
 - 8 c) bringing the muntin bar material and the covering material into contact with each other
 - 9 to cause the covering material to overlie and adhere to the muntin bar material and form an
 - 10 elongated strip of stock material which is subsequently bent to form a muntin bar.
2. The process of claim 1 additionally comprising applying a coating to the elongated muntin bar material by painting the elongated muntin bar material on said one side prior to bringing the covering material into contact with a painted portion of said one side of the muntin bar material.
3. The process of claim 1 wherein the elongated strip of covering material is a multilayered foil and wherein one layer is an adhesive, a second layer is a plastic film carrier, and a third layer is a release layer and further comprising the step of applying a controlled pressure as the multilayered foil is brought into contact with the muntin bar material to cause the adhesive layer to bond to the muntin bar material.
4. The process of claim 3 additionally including applying heat to a region of contact between the covering material and the muntin bar material.
5. The process of claim 4 wherein the muntin bar material is a flexible metal strip of material that

is unwound from a coil and then moved through a heating zone prior to bringing the covering material into contact with the said flexible metal strip.

6. The process of claim 5 wherein a combined strip of flexible metal strip and adhering covering material is moved through a cooling region downstream from a region wherein the covering material is applied to the metal strip.

7. The process of claim 6 wherein a combined strip of flexible metal strip and adhering covering is wound onto a supply downstream from the cooling region.

8. The process of claim 2 wherein one entire side of the elongated muntin bar material is painted to provide a painted surface and wherein one half of said painted surface is covered with the elongated strip of covering material to form a two tone muntin bar strip.

9. The process of claim 4 wherein the applying of heat is performed by a heated contact roll that also applies pressure to a region of engagement between the elongated strip of muntin bar material and the elongated strip of covering material.

10. The process of claim 1 wherein the elongated strip of stock material is roll formed to form a rectangular muntin bar.

11. The process of claim 1 wherein the elongated strip of stock material is roll formed to form a contour muntin bar.

12. The process of claim 1 wherein one complete surface of the stock material is covered with the covering material to define an outer appearance for both sides of a roll formed muntin bar.

1 13. A system for fabricating an elongated strip of stock material for use in making muntin bars

2 comprising:

3 a) a supply of a first elongated strip of flexible muntin bar material that has been treated on
4 at least one side to define an exposed surface of a completed muntin bar fabricated from the
5 flexible muntin bar material;

6 b) a supply of a second elongated strip of covering material for controlled application onto
7 a specified portion of a surface of the muntin bar material, said covering material comprising an
8 adhesive for adhering the covering material to the muntin bar material;

9 c) a drive system for simultaneously moving the muntin bar material and the covering
10 material into contact with each other to cause the covering material to overlie and adhere to the
11 muntin bar material; and

12 d) a pressure roll that defines a nip for applying pressure to a region of engagement
13 between the muntin bar material and the covering material pass.

14. The system of claim 13 further comprising a heater for heating the strip of flexible muntin bar prior to its arrival at the nip.

15. The system of claim 13 wherein the pressure roll is heated by a source of heat to elevate a temperature of the muntin bar material and the covering material.

16. The system of claim 15 further comprising a cooling tunnel to cool a combined muntin bar material and covering material down stream from the nip.

17. The system of claim 13 wherein the covering material is a multiple layer material including a carrier layer which is separated from one or more other layers of said strip of covering material at the nip and further comprising a recoiler for winding the carrier layer.

18. The system of claim 13 further comprising a controller for operating the drive system and

further including an optical encoder coupled to the controller for monitoring movement of one of the strips as they move along respective paths of travel.

19. The system of claim 13 further comprising a takeup roll for recoiling an elongated strip of stock material for subsequent fabrication into a series of muntin bars.

20. The system of claim 13 further comprising one or more guide rollers for maintaining side to side registration of the first elongated strip of flexible muntin bar material with the second elongated strip of covering material in the region of the nip.

1 21. A flexible elongated multilayer strip of covering material for use in fabricating two tone
2 muntin bars comprising:

3 a) a first layer having an appearance which is visible on a muntin bar fabricated from the
4 multilayer strip;

5 b) an adhesive layer for causing the multilayer strip to adhere to a strip of muntin bar
6 material; and

7 c) a carrier layer for supporting the first layer as the multilayer strip is brought into contact
8 with a muntin bar strip.

22. The multilayer strip of claim 20 further comprising a protective layer which protects the first layer on a fabricated muntin bar.

23. The multilayer strip of claim 20 further comprising a release layer coupled to the carrier layer for selectively causing the carrier layer to separate from said first layer when the adhesive layer is brought in contact with a surface of a strip of muntin bar material.

1 24. A process for making elongated stock material for fabrication into muntin bars comprising the

2 steps of:

3 a) providing an elongated strip of muntin bar material that has been treated on at least a
4 portion of one side to define an outer surface of a completed muntin bar fabricated from the
5 muntin bar material;

6 b) providing an elongated strip of covering material for controlled application onto a
7 specified portion of the treated portion of the muntin bar material, said elongated strip of covering
8 material including an adhesive for adhering the covering material to the muntin bar material; and

9 c) bringing the muntin bar material and the covering material into contact with each other
10 to cause the covering material to overlie and adhere to the muntin bar material and form an
11 elongated strip of stock material which is subsequently bent to form a muntin bar.

25. The process of claim 24 additionally comprising applying a coating to the elongated muntin bar material by painting the elongated muntin bar material on said one side prior to bringing the covering material into contact with a painted portion of said one side of the muntin bar material.

26. The process of claim 24 wherein the elongated strip of covering material is a multilayered foil and wherein one layer is an adhesive, a second layer is a plastic film carrier, and a third layer is a release layer and further comprising the step of applying a controlled pressure as the multilayered foil is brought into contact with the muntin bar material to cause the adhesive layer to bond to the muntin bar material.

27. The process of claim 26 additionally including applying heat to a region of contact between the covering material and the muntin bar material.

28. The process of claim 27 wherein the muntin bar material is a flexible metal strip of material that is unwound from a coil and then moved through a heating zone prior to bringing the covering material into contact with the said flexible metal strip.

29. The process of claim 28 wherein a combined strip of flexible metal strip and adhering covering material is moved through a cooling region downstream from a region wherein the covering material is applied to the metal strip.

30. The process of claim 29 wherein a combined strip of flexible metal strip and adhering covering is wound onto a supply downstream from the cooling region.

31. The process of claim 25 wherein one entire side of the elongated muntin bar material is painted to provide a painted surface and wherein one half of said painted surface is covered with the elongated strip of covering material to form a two tone muntin bar strip.

32. The process of claim 27 wherein the applying of heat is performed by a heated contact roll that also applies pressure to a region of engagement between the elongated strip of muntin bar material and the elongated strip of covering material.